

# Attitudes toward interprofessional education and collaborative practices in Mongolia

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## ABSTRACT

From the perspective of activity theory, it can be argued that the major challenge in relation to implementing interprofessional education (IPE) could be embraced as contradictions that may lead to change. Patients have complex health needs and typically require insight from more than one discipline to address issues regarding their health status (Lumague et al. 2006). The World Health Organization (WHO) recommends that institutions engaged in health professional education and training consider implementing IPE in both undergraduate and postgraduate programs (WHO, 2010). The purpose of this study was to identify the needs of IPECP for health care professionals, faculty members, and students. Methods: The survey instrument contained four scales to evaluate faculty attitudes toward IPE and teamwork, adapted from the methods of Curran et al. (2007). Each scale asked respondents to rate their attitudes toward statements on a 5-point Likert scale (1=strongly disagree; 2=disagree; 3=neutral; 4=agree; 5=strongly agree). The initial factor extractions were performed by means of principal components analysis. To define the model structure more clearly, an exploratory factor analysis using varimax rotation was conducted. The level of significance was  $p < .0001$  for all tests. Results: As shown in Table 2, the Kaiser–Meyer–Olkin index was 0.902, indicating sampling adequacy, and the Bartlett Sphericity Chi-Square index was 2246.5 ( $p < 0.0001$ ). Cronbach's alpha for the 14 items was 0.731, revealing a high rate of internal consistency. The modified Attitude toward health care team scores (ATHCTS) questionnaire was categorized into four factors: "Quality of care," "Team efficiency," "Patient-centered care," and "Negative factors." Conclusion: Findings suggest that the positive attitude of health care professionals, faculty members and students towards IPE indicates the need for IPE training.

**Keywords:** health care; interprofessional education; attitudes; interprofessional learning.

## 1. INTRODUCTION

Interprofessional education occurs when students from two or more professions learn about, from, and with each other to enable effective collaboration and improve health outcomes (WHO, 2010). Once students understand how to work across professions, they are ready to enter the workplace as members of the collaborative practice team (Gilbert, Yan et al. 2010). Interprofessional learners need to learn and practice how to collaborate across professions using an interprofessional team perspective so that they can provide quality of care, while still assuming their profession-specific roles (Khalili, Orchard

et al. 2013). Interprofessional education enables the baccalaureate graduate to enter the workplace with baseline competencies and confidence for interactions and communication skills, that will improve practice, thus yielding better patient outcomes. Interprofessional education optimizes opportunities for the development of respect and trust for other members of the health care team (Buring, Bhushan et al. 2009). By strengthening the evidence base, the Gunma University committee hopes to encourage stronger partnerships among educators, researchers, practitioners, patients, families, and communities. Accordingly, the paper initially discusses micro (individual level), meso (institutional/organizational level), and macro (socio-cultural and political level) factors that can influence the success of an IPE initiative (Oandasan and Reeves 2005). Mongolian National University of Medical Sciences (MNUMS) is located in Ulaanbaatar, the capital city, and consists of 10 branches schools: the School of Medicine, the School of Biomedicine, the School of Dentistry, the School of Public Health, the School of International Mongolian Traditional Medical, the School of Pharmacy, the School of Nursing, the Darkhan-Uul Medical College, the Dornogobi Medical College, the Gobi-Altai Medical College. The MNUMS offers education for 13 health professions: medical doctor, pharmacy, biomedical researcher, public health researcher, traditional medical doctor, social worker, health informatics, nurse, midwifery, physical therapists, occupational therapists and medical equipment technicians. It is a National University and the only institution to education health professionals in Mongolia. This study is ground breaking by first comparing approaches to IPE for faculty members, health professionals and students. The study further identifies the need for implementing the IPE system, which is important in terms of empowering faculty, students and graduates to provide client-centered, quality care. The purpose of this study was to identify the needs of IPE for health professionals, faculty members and students.

## 2. METHODS STUDY DESIGN

The present cross-sectional study was designed as a descriptive investigation. The survey instrument contained four scales to evaluate the attitudes of faculty members, health professionals and students toward IPE and teamwork, adapted from the methods of Curran et al. (2007). Each scale asked respondents to rate their attitudes towards statements on a 5-point Likert scale (1=strongly disagree; 2=disagree; 3=neutral; 4=agree; 5=strongly agree). The initial factor extractions were performed by means of principal components analysis. To define the structure of the model more clearly, an exploratory factor analysis using varimax rotation was conducted. The level of significance was  $p<.0001$  for all tests.

## 3. STUDY POPULATION

The study population consisted of faculty members from the Mongolian National University of Medical Sciences (MNUMS) (91 faculty members). These 91 faculty members came from the following faculties: School of Medicine (18 faculty members), School of Nursing (9 faculty members), School of Pharmacy (4 faculty members), School of Public (8 faculty members), School of Traditional Medicine (3 students), School of Biomedicine (24 faculty members), School of Dentistry (5 students), School of Medicine of Darkhan - Uul province (7 faculty members), School of Medicine of Dornogobi province (7 faculty members), and School of Medicine of Gobi-Altai province (7 faculty members). A further 443 students from the MNUMS School of Medicine were surveyed. These participants included 195 medical doctor's students (60 in their fourth year, 66 in their fifth year and 69 in their sixth year). From the MNUMS School of Nursing, 25 students were surveyed from Midwifery (including 12 from their third year and 13 from their fourth year), 68 students from Nursing (34 from their third year and 34 from their fourth year), 12 from physical therapist's students (6 from their third year and 6 from their fourth year), 4 from occupational therapist's students (2 from their third year and 2 from their fourth year). From the School of Public, 15 social workers students were surveyed (7 from their third year and 8 from their fourth year), as well as 18 Public Health researchers's students (8 from their fourth year and 10 from their fifth year). From the School of Traditional Medical Doctor, 20 students were surveyed (8 from their fourth year and 12 from their fifth year). In the School Biomedicine, 15 students were surveyed (12 from their fourth year and 3 from their fifth year). 7 students from the Health informatics department's students were also surveyed (one person in their third year and six students in their fourth year). From the School of Dentistry, 36 students (17 in their fourth year and 19 in their fifth year) were surveyed. Finally, a number of Mongolian health care professionals (graduates of MNUMS 611) in the hospitals of centers and districts were included in this study (namely, 217 medical doctors, 316 nurses, 16 midwives, 21 pharmacologists and 41 administrations specialists).

#### 4. SURVEY INSTRUMENT

The survey was composed of a respondent characteristics section, a 14-item Likert scale to measure attitudes toward interprofessional health care teams (Curran et al. 2007), a 15-item Likert scale to assess attitudes toward IPE (Curran et al. 2007), a 13-item Likert scale to assess attitudes toward interprofessional learning in an academic setting (Curran et al. 2007) and a 10-item Likert scale to assess barriers to IPE in an academic setting (Gardner et al. 2002). Responses were provided on a five-point Likert scale from one (strongly disagree) to five (strongly agree), in accordance with Curran et al. (2007). Authors who passed the 1st level of the Japanese Language proficiency test translated the English and Japanese versions of the Attitudes toward health care team score (ATHCTS) questionnaire into Mongolian.

#### 5. STUDY PROCEDURE

This study was conducted in the 2019 academic year. During the first term, an attitudinal survey was administered to the faculty members, health professionals, and students. The survey was supervised by the professors responsible for each class. Survey responses were always confidential and names and other identifying information were removed.

#### 6. STATISTICAL ANALYSIS

Data combined from faculty members, health professionals and students at MNUMS were analyzed using the Statistical Package for the Social Sciences, version 23.OJ. The scale was subjected to exploratory factor analysis to examine the underlying constructs of the survey. The suitability of the correlation matrix was determined by the Kaiser–Meyer–Olkin estimate of sampling adequacy and Bartlett's Test of Sphericity. The number of factors retained for the initial solutions and entered into the rotations was determined by application of Kaiser's criterion (Eigenvalues  $>1$ ). The initial factor extractions were performed by means of principal component analysis. To clearly define the structure, an exploratory factor analysis using varimax rotation was conducted. The level of significance was set at 5% for all tests.

#### 7. ETHICS

This study was approved by the Ethics Committee of Mongolian National University of Medical Sciences (MNUMS) (Approval number №8/3/2019-6-21) in Ulaanbaatar, Mongolia.

#### 8. RESULTS DEMOGRAPHICS OF RESPONDENTS

The survey was completed by 19.8% of the faculty members from the Medical School, (MNUMS), 9.8% of the faculty members from the Nursing School, (MNUMS), 26.4% of the faculty members from the Biomedical School, (MNUMS), 4.3% of the faculty members from the Pharmacy School, (MNUMS), 8.7% of the faculty members from the Public Health School, (MNUMS) 3.0% of the faculty members from the Traditional Medical School, (MNUMS) 5.3% of the faculty members from the Dentist School, (MNUMS) 7.6% of the faculty members from Darkhan's Medical School, (MNUMS) 7.6% of the faculty members from Dornogobi's Medical School, (MNUMS) and 7.6% of the faculty members from Gobi-Altai's Medical School, (MNUMS).

In terms of the surveys completed by health professionals, 35.51% of the medical doctors, 51.71% of the nurses, 2.61% of the midwives, 3.43% of the pharmacologists and 6.69% of the administration staff in hospitals in Ulaanbaatar, (Mongolia) completed the survey.

For the surveys completed by students, 12.3% of respondents were male students and 87.7% were female students. 44% were physician students, 6.5% were pharmacology students, 5.7% were midwifery students, 15.4% were nursing students, 2.8% were PT students, 0.9% were OT students, 3.4% were social worker students, 4.1% were traditional physician students, 3.4% were biomedical students, 8.1% were dentistry students, 4.1% were public health research students, and 1.6% were health informatics students at MNUMS. The respondents' demographic information is shown in Tables 1, 2, and 3.

#### 9. OVERALL MODIFIED MEAN SCORES

As shown in Table 4, the overall modified ATHCTS mean score of faculty members, health care professionals and students was significantly positive ( $3.92 \pm 0.70$  vs  $3.75 \pm 0.93$  vs  $3.87 \pm 1.03$ ,  $p < 0.0001$ ).

The modified mean scores of attitudes towards interprofessional education was also significantly positive for faculty members, health care professionals and students ( $4.07 \pm 0.66$  vs  $3.93 \pm 1.1$  vs  $4.05 \pm 1.0$ ,  $p < 0.0001$ ). Overall, mean scores for modified attitudes towards interprofessional learning in an academic setting was significantly positive of faculty members than health care professionals and students ( $3.8 \pm 0.73$  vs  $3.74 \pm 1.08$  vs  $3.72 \pm 1.46$ ,  $p < 0.0001$ ). Finally, overall modified barriers to IPE in the academic setting mean scores on behalf of faculty members, health professionals and students was significantly positive ( $3.51 \pm 0.89$  vs  $3.4 \pm 0.84$  vs  $3.42 \pm 0.87$ ,  $p < 0.0001$ ).

## 10. EXPLORATORY FACTOR ANALYSIS

The Kaiser–Meyer–Olkin index was 0.902, indicating sampling adequacy, and the Bartlett Sphericity Chi-Square index was 2246.5 ( $p < 0.001$ ). Accordingly, the null hypothesis that the correlation matrix was an identity matrix and thus, the data was unsuitable for factor analysis was convincingly rejected. Cronbach's alpha of the 14-item modified ATHCTS was 0.765, revealing a high rate of internal consistency. The modified ATHCTS questionnaire was categorized into the following three subscales: "Quality of care delivery," "Patient-centered care," and "Team efficiency" with Cronbach's alpha measures of 0.767, 0.533, and 0.427, respectively, as shown in Table 5.

## 11. DISCUSSION

The results showed that the overall mean modified ATHCTS score of faculty members, health care professionals and students was significantly positive at MNUMS. The Kaiser–Meyer–Olkin index was 0.902, indicating sampling adequacy, and the Bartlett Sphericity Chi-Square index was 2246.5 ( $p < 0.001$ ). Accordingly, the null hypothesis that the correlation matrix was an identity matrix and thus, the data was unsuitable for factor analysis was convincingly rejected. Cronbach's alpha of the 14-item modified ATHCTS was 0.765, revealing a high rate of internal consistency. The modified ATHCTS questionnaire was categorized into the following three subscales: "Quality of care delivery," "Patient-centered care," and "Team efficiency" with Cronbach's alpha measures of 0.767, 0.533, and 0.427, respectively. Lee, B., F. Celletti, T. Makino, H. Matsui, and H. Watanabe reported the findings from this survey suggested that faculty members, health care professionals and students have positive attitudes toward IPE (Lee, Celletti et al. 2012). Gary L., B. Dallaghan, E. Hoffman, E. Lyden and C. Bevil reported a key lesson learned from this study is that, even with modest resources and modest progress towards IPE, an assessment can serve as a starting point from which to launch and engage faculty for further IPE initiatives (Gary et al. 2017). Importantly, factors that may influence undergraduates' attitudes to interprofessional learning need to be studied. This includes the potential influence of academic or institutional culture on students' attitude to IPE and motivation-to-learn (Vandergoot, Sarris et al. 2018). Three factors were obtained from the factor analysis of the modified ATHCTS. As shown in Table 5, the fundamental structure of the two factors was same as that of the original ATHCTS reported previously (Hyer 2000). In terms of IPE evaluation, the findings also highlight the importance of measuring baseline attitudinal constructs as part of systematic evaluative activities when introducing new IPE initiatives within academic settings (Vernon R Curran 2007). In contrast, the more positive attitudes of deans of nursing schools with IPE courses and those of schools in rural areas are in line with global attitudes (Takatoshi Makino 2015). The modified ATHCTS questionnaire was categorized into the following three subscales: "Quality of care delivery," "Patient-centered care," and "Team efficiency," with Cronbach's alpha measures of 0.76, 0.53, and 0.42, respectively. The factor solutions obtained in this study correspond well to a previous study by Takatoshi et al. (2017).

## 12. LIMITATIONS

This study's main limitation is that it was a cross-sectional study. To further investigate this issue, future studies with pre-post or longitudinal study designs will be needed. In addition, an ideal study design involving a target population with the same composition might be needed in the future. Finally, in the future, we face the need to develop experimental studies in order to produce objective evidence-based conclusions.

## CONCLUSION

In conclusion, the findings suggest that the positive attitude of health professionals, faculty members and students towards IPE indicates the need for IPE training. Further development of a program to implement the IPE Training Methods is needed.

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### DECLARATION OF INTEREST

The authors have no conflicts of interest to declarations of interest.

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